Homes England

The Housing and Regeneration Agency

West of Ifield, Crawley
Environmental Statement: Volume 1: Main Report

CHAPTER 16: Cumulative Effects
Version 1 - Planning submission

July 2025

CUMULATIVE EFFECTS

16.1 Introduction

16.1.1 The EIA Regulations require that all significant effects of a proposed development are taken into account, including cumulative effects.

16.1.2 There is no prescriptive guidance on the methodology for the assessment of cumulative effects; however, the Planning Inspectorate (PINS) document 'Using the 'Rochdale Envelope' (July 2018)[1], which was drafted in relation to infrastructure projects, states the following:

"*The potential cumulative impacts with other developments will also need to be carefully identified such that the likely significant effects can be shown to have been identified and assessed against the baseline position (which would include built and operational development). In assessing cumulative impacts, other development should be identified through consultation with the local planning authorities and other relevant authorities.*"

16.1.3 The Institute of Environmental Management and Assessment (IEMA) Guidance[2] identifies two types of cumulative effects in Environmental Impact Assessment.

- Inter-project effects – combined or additive effects generated from the proposed development together with other planned or likely foreseeable developments and also referred to as 'in-combination effects'. These other developments may generate their own individually insignificant effects but when considered together could amount to significant cumulative effects, for example, combined transport and accessibility impacts from two or more (proposed) developments; and
- Intra-project effects – combined effects of different types of impact or 'impact interactions' for the same project on a single receptor, for example the multiplying effects arising from noise, dust and visual impacts during the construction of the proposed development on a particular sensitive receptor. Each of these when considered in isolation may have a limited effect, but when taken together the sum may be greater than the parts.

16.1.4 The inter-project cumulative effects have been considered and addressed in each technical chapter of the Environmental Statement, as appropriate, and a summary has been provided in this chapter for reference. An assessment on likely intra-project effects is also provided in this chapter.

16.2 Assessment of Inter-Project Effects

Methodology

Committed Developments

16.2.1 A list of cumulative schemes for consideration in the inter-project cumulative effect assessment was presented to Horsham District Council (HDC) as part of the ES Scoping Opinion Request Report on 21st May 2024. This list was subject to screening to identify the cumulative schemes to be included in the ES. The screening criteria was selected based on commonly used criteria for inter cumulative effects assessments and based on Ramboll's professional judgement. The screening process was based on the following criteria:

[1] National Infrastructure Planning, 2018. Advice Note 9: Rochdale Envelope, Version 3, online. Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-nine-rochdale-envelope/

[2] Institute of Environmental Management and Assessment. The State of Environmental Impact Assessment Practice in the UK. 2011.

- minerals and waste developments; or
- significant highways, infrastructure and public transport schemes; or
- development comprising more than 10,000 sq m of gross development floor area; or
- development comprising 50 or more residential units; and
- within 5km of the Site.

16.2.2 Crawley Borough Council (CBC) provided comments suggesting that development comprising less than 50 residential units should be included in the 'long list' of schemes to be assessed. CBC stated this was because many of the residential developments in Crawley were 'smaller' in scale and hence wouldn't be included in the screening criteria. However, this is considered contrary to the usual industry standard practice of assessing inter cumulative effects and comprises a screening threshold not typically adopted. This is because including schemes of this size would be considered to diminish the effectiveness of the assessment by disproportionate consideration of relatively small development schemes. Therefore, it has been proposed to use the screening above, informed by professional judgement, which comprises 50 or more residential units. This approach was set out in the May 2024 ES Scoping Opinion Request Report , with no comments received on the criteria of cumulative schemes by HDC.

16.2.3 Whilst not covered under the criteria as outlined herein, in the interest of adopting a precautionary approach the cumulative effects assessment has also included the proposed alterations of Gatwick Airport to support dual runway operations through the routine use of the existing northern runway and to accommodate up to 80.2 million passengers per annum, currently subject to an application for a Development Consent Order (DCO) in respect of which the Secretary of State has issued a "minded to approve" letter, dated February 2025[3]. The development is anticipated to include amendments to taxiways, terminals and ancillary facilities, highways and rivers; as well as temporary construction works, mitigation works and other associated development at Gatwick Airport.

16.2.4 For approved projects which have had subsequent amendments (minor and non-material), the latest known iteration has been considered. For approved projects where reserved matters applications have been submitted pursuant to an outline consent, the outline consent will be considered to represent the 'worst-case' scenario as the outline permission identifies the maximum parameters.

16.2.5 Cumulative schemes that have been taken into consideration within the ES chapters, with respect to potential inter-project effects are presented in Table 16.1 (the 'Committed Developments'). Figure 16.1 depicts the location of these sites.

[3] Department for Transport. "Minded to approve" letter for the application for the Gatwick Airport Northern Runway Project Development Consent Order. Available online at https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020005/TR020005-003951-Gatwick%20Airport%20Northern%20Runway%20Project%20-%20Minded%20to%20Letter.pdf

Table 16.1: Committed Developments Description

Map No.	Scheme	Local Authority	Application Ref	Applicant	Brief description	Planning Use Class		Homes	Distance (km)	Planning Status	
						Use Class(es)	Use Sub Class(es)			Approved/ Submitted	Details
1	Land North of Steers Lane	Crawley BC	CR/2018/ 0894/OUT	Danescroft (RLP Crawley) LLP	Outline application for erection of up to 185 residential dwellings, with the associated vehicular and pedestrian access via steers lane, car parking and cycle storage and landscaping (all matters reserved except for access) at Steers Lane, Forge Wood, Pound Hill, Crawley RH10 3ZJ	C - Hotels, hostels and dwelling houses	N/A	185	4.4	Approved	Appeal allowed and planning permission granted 14-17 January 2020. Construction well under way (having commenced during 2022/23).
2	Overline House, Station Way	Crawley BC	CR/2016/ 0294/OUT	Rockspring UK Value Crawley (Jersey) Ltd C/O Arora	Outline application (all matters reserved) for demolition of existing office building and integrated railway station building, footbridges and ancillary structures. erection of 308 studio, 1, 2 and 3 bedroom residential apartments and associated parking (c3 use class); integrated railway station building, footbridges, and ancillary structures; flexible use retail / coffee shop / business centre (a1 / a3 / b1 use classes); 120 space multi-deck station car park, vehicle drop-off lay-by and associated highway works and public realm enhancements at Overline House, Crawley Station and adjacent highway, Station	C - Hotels, hostels and dwelling houses	C3	308	2.5	Approved	Outline permission granted in Aug-16. Detailed scheme (under CR/2019/0602/ARM and CR/2019/0660/FUL) benefit from committee resolution (April 2021) to grant planning permission subject to S106.

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Map No.	Scheme	Local Authority	Application Ref	Applicant	Brief description	Planning Use Class		Homes	Distance (km)	Planning Status	
						Use Class(es)	Use Sub Class(es)			Approved/ Submitted	Details
					Way, Northgate, Crawley RH10 1JA						
3	Land North of Horsham	Horsham DC	DC/16/1677	Liberty Property Trust	Outline planning application with all matters reserved except access for a mixed use strategic development to include housing (up to 2,750 dwellings), business park (up to 46,450 m2), retail, community centre, leisure facilities, education facilities, public open space, landscaping and related infrastructure at Land North of Horsham West Sussex. Easting: 518370, Northing: 133777 (No postcode)	C - Hotels, hostels and dwelling houses	N/A	2,750	4.1	Approved	Approved March 2018. An assumed 15 year build. Works have commenced in some land parcels. Further RMAs submitted 2024 to discharge conditions in other land parcels (DC/24/1927)
4	Crawley Civic Office	Crawley BC	CR/2017/ 0997/OUT	Westrock Ltd	Hybrid application comprising: a) detailed application for demolition of the existing council offices and civic hall, and erection of a replacement town hall, offices and a public square, and associated access, car parking, landscaping and ancillary works. b) outline application for residential development comprising up to 182 units including commercial space with details of access, all other matters reserved (layout, scale,	B - Further business and industrial activities	N/A	N/A	2.6	Approved	Hybrid planning permission granted in Feb 2019. New Town Hall/office building completed in late 2022. Reserved matters application for residential phase (CR/2022/0070/ARM)
						C - Hotels, hostels and dwelling houses	N/A	182			

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						Use Class(es)	Use Sub Class(es)			Approved/ Submitted	Details
					landscaping and appearance) at Town Hall, The Boulevard, Northgate, Crawley RH10 1UZ						pending determination
5	Tushmore Lane	Crawley BC	CR/2022/0407/OUT	Calm Homes Limited	Outline Planning application (all matters reserved) for the demolition of four dwellings and associated structures and the erection of new residential flats (within two separate buildings) to provide 60 apartments with associated landscaping, ancillary storage and communal car parking	C - Hotels, hostels and dwelling houses	N/A	60	2.1	Withdrawn	Withdrawn October 2024.
6	Steers Lane, Phase 2	Crawley BC	CR/2022/0055/FUL	Bellway Homes Ltd (South London)	Erection of 60 dwellings including associated parking, landscaping and infrastructure works (amended plans & documents received)	C - Hotels, hostels and dwelling houses	N/A	N/A	4.4	Approved	Approved January 2024. Commenced.
7	Tinsley Lane	Crawley BC	CR/2021/0355/OUT	Homes England C/O Agent Redcliff Quay 120 Redcliff Street Bristol BS1 6HU	Outline Application For Development Of Up To 138 Newmarket And Affordable Homes (Use Class C3); Demolition Of The Existing Oakwood Football Club Facilities And Provision Of A New Clubhouse, Senior All-Weather And Junior Grass Football Pitch; Provision Of New Public Open Space And Woodland Access; New Site Access From Birch Lea	C - Hotels, hostels and dwelling houses	C3	138	3.4	Submitted	Awaiting Decision – scheduled for Planning Committee August 2025

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Map No.	Scheme	Local Authority	Application Ref	Applicant	Brief description	Planning Use Class		Homes	Distance (km)	Planning Status	
						Use Class(es)	Use Sub Class(es)			Approved/ Submitted	Details
					And Improvements To The Existing Site Access From Kenmara Court; And Other Ancillary Works (Access To Be Approved With All Other Matters Reserved).						
8	Former TSB Site, Russell Way	Crawley BC	CR/2020/ 0037/FUL	Bellway Homes Ltd	Erection Of L Shaped 4 Storey Building Comprising 59 X Flats With Associated Landscaping, Refuse And Cycle Storage, Infrastructure Works And Parking Court At The Rear	C - Hotels, hostels and dwelling houses	C3	59	3.8	Approved	Benefits from committee resolution (Feb 2021) to grant planning permission subject to conclusion of a S106 agreement. Awaiting decision
9	Longley House, East Park	Crawley BC	CR/2020/ 0024/FUL	A2Dominion Group Ltd	Demolition Of Longley House (Offices - Class B1a) & Erection Of Building Ranging Between 4 To 9 Storeys To Provide 121 X Residential Units (Class C3) With Associated Sub-Station, Car/Cycle Parking, Tree Works, Public Realm Improvements And Landscaping	C - Hotels, hostels and dwelling houses	C3	121	2.5	Approved	Benefits from committee resolution (Aug 2022) to grant planning permission subject to conclusion of a S106 agreement. Awaiting decision
10	Breezehurst Drive	Crawley BC	CR/2020/ 0192/RG3	Bailey Partnership LLP	Erection Of 85 Affordable Houses & Flats, Access Roads, Car Parking, Sports Pitch, Open Space & Associated Works	C - Hotels, hostels and dwelling houses	C3	85	1.6	Approved	Benefits from committee resolution (Feb 2021) to grant planning permission subject to conclusion

Table 16.1: Committed Developments Description

Map No.	Scheme	Local Authority	Application Ref	Applicant	Brief description	Planning Use Class		Homes	Distance (km)	Planning Status	
						Use Class(es)	Use Sub Class(es)			Approved/ Submitted	Details
											of a S106 agreement. Awaiting decision
11	Gatwick Airport	The Planning Inspectorate	TR020005	Gatwick Airport Limited	The amendment of Gatwick Airport to support dual runway operations through the routine use of the existing northern runway and to accommodate up to 74 million passengers per annum. The development will include amendments to taxiways, terminals and ancillary facilities, highways and rivers; as well as temporary construction works, mitigation works and other associated development at Gatwick Airport, Horley RH6 0NP	D - Non-residential institutions; assembly and leisure	N/A	N/A	1	Submitted	The Planning Inspectorate on behalf of the Secretary of State accepted the application for Development Consent Order on 3rd August 2023. Decision Stage set to be completed 27 October 2025.
12	Former Pay and Display Car Park, Telford Place	Crawley BC	CR/2023/ 0357/OUT	Affordable Housing and Healthcare Group Ltd	Outline Application For Up To 300 Self-Contained Affordable Residential Units To Provide Later Living (C2 Use Class) And Affordable Rent/Shared Ownership (C3 Use Class) Accommodation With Private And Communal Amenity Space, Two Units For Either Commercial, Business And Service (E Use Class) Or Local Community And Learning (F Use Class) Uses,	C - Hotels, hostels and dwelling houses	C2, C3, E & F	294 (up to 300)	3.4	Approved	Benefits from committee resolution (December 2023) to grant permission subject to S106. Approved October 2024.

Table 16.1: Committed Developments Description

Map No.	Scheme	Local Authority	Application Ref	Applicant	Brief description	Planning Use Class		Homes	Distance (km)	Planning Status	
						Use Class(es)	Use Sub Class(es)			Approved/ Submitted	Details
					Creation Of New Vehicular Access From Haslett Avenue East, Closure Of Existing Vehicular Access From Southgate Avenue, Formation Of A New Landscaped Public Realm Area To The South Of Crawley Library And Ancillary Facilities Such As Vehicle Parking, Cycle And Bin Stores And Plant Rooms (Access And Scale To Be Determined, With Layout, Appearance And Landscaping Forming Reserved Matters).						
13	Kilnwood Vale	Horsham DC	DC/10/1612	Crest Nicholson Operations Ltd	Outline approval for the development of approximately 2500 dwellings, new access from A264 and a secondary access from A264, neighbourhood centre, comprising retail, community building with library facility, public house, primary care centre and care home, main pumping station, land for primary school and nursery, land for employment uses, new rail station, energy centre and associated amenity space. Full planning permission for engineering operations	C - Hotels, hostels and dwelling houses	C2, C3, E, F1 & Sui Genesis	2500	0.5	Approved	Outline app approved 17/10/2011 Approved 28.04.2016 and in progress. Currently at approximately 1,200 occupations. Only dwellings built so far.

Table 16.1: Committed Developments Description

Map No.	Scheme	Local Authority	Application Ref	Applicant	Brief description	Planning Use Class		Homes	Distance (km)	Planning Status	
						Use Class(es)	Use Sub Class(es)			Approved/ Submitted	Details
					associated with landfill remediation and associated infrastructure including pumping station. Full permission for the development of Phase 1 of 291 dwellings, internal roads, garages, driveways, 756 parking spaces, pathways, sub[1]station, flood attenuation ponds and associated amenity space. Full permission for the construction of a 3 to 6 metre high (above ground level) noise attenuation landform for approximately 700 metres, associated landscaping, pedestrian/cycleway and service provision (land known as Kilnwood Vale)						
14	Reserved Land – Kilnwood Vale	Horsham DC	DC/17/2481	Crest Nicholson Operations Ltd	Outline planning application for the development of approximately 227 dwellings (between 204 and 250 dwellings) with the construction of a new access from Calvert Link, a pumping station and associated amenity space (all matters reserved except for access)	C - Hotels, hostels and dwelling houses	C3	227	1.4	Approved	Approved 04.10.2018 with Phase 6A largely complete. This is the land to east of the Kilnwood vale site and is extension of the site.
15	Brookvale Land at Kingsfold Dorking	Horsham DC	EIA/24/0006	Mr Adam Kindred	EIA scoping opinion request for development of the site for a new garden village comprising approximately 2,125 homes,	C - Hotels, hostels and	C2, C3, E, F1, and Sui Genesis	2,125	5	EIA Advice Given	Request for scoping opinion received Wed 23 Oct 2024

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Map No.	Scheme	Local Authority	Application Ref	Applicant	Brief description	Planning Use Class		Homes	Distance (km)	Planning Status	
						Use Class(es)	Use Sub Class(es)			Approved/ Submitted	Details
	Road Kingsfold West Sussex				including extra care provision, employment uses, primary school provision, a solar farm, a new railway station and a local centre.	dwelling houses					EIA Advice Given 5 December 2024
16	Land Adj To Hydehurst Lane, Northgate, Crawley	Crawley BC	CR/2023/ 0197/FUL	UK Real Estate Fund	Demolition of existing buildings and erection of a parcel distribution centre including car and cycle parking	B - Further business and industrial activities	B8	0	2.2	Approved	Approved 26 Jan 2024
17	Former GSK Site (north and west land parcels)	Crawley BC	CR/2014/ 0415/ARM	Digital Realty Crawley 2 SARL & HSBC Bank Pension	Permission CR/2014/0415/ARM relates to the north and west land parcel. It permits development of 2 data storage halls (Buildings 1 and 2), an emergency power building (Building 3), and a business hub building comprising café at ground floor with offices above (Building 4). Building 1 is complete and occupied - it provides 13,431sqm B8 on a 2.106 ha plot. Building 2 provides approx. 1,521sqm B1a and 19,391sqm B8 on a 2.59ha plot. Work is yet to commence on this building. Building 3 provides 2,696sqm plant on a 0.2ha plot. Building 4 provides 1,433sqm	B - Further business and industrial activities	B8	0	2.3	Approved	Approved 4 August 2014

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						Use Class(es)	Use Sub Class(es)			Approved/ Submitted	Details
					B1a office and 87sqm A3 cafe on a 0.4ha plot.						
18	Land at Faraday Road and Manor Royal	Crawley BC	CR/2021/ 0174/FUL	Lakenorth Limited	Proposed Demolition Of Existing Buildings And Construction Of A New Warehouse Building With Ancillary Offices, Associated Service Yard, Parking, Access Alterations, Infrastructure, Landscaping And Ancillary Works	B - Further business and industrial activities	B8	0	2.5	Approved	Approved April 2022
19	Land to the North of Fleming Way (Eastman House and Former Flight Training Centre)	Crawley BC	CR/2022/ 0187/FUL	CP Logistics UK Crawley Propco Ltd / Panattoni UK	Demolition Of Existing Buildings To Provide Two Commercial Buildings (Units A And B) For Storage And Distribution (B8) Use With Ancillary Offices, With Associated Enabling Works, Access (Including New Access For Unit A Off Hydehurst Drive), Parking And Landscaping	B - Further business and industrial activities	B8	0	2	Approved	Approved 7 July 2023
20	44 Goffs Park Road, Southgate Crawley	Crawley BC	CR/2023/ 0223/FUL	Ruby Senior Living Ltd	Erection of an extra-care retirement facility (use Class C2), Comprising 106 Self Contained Apartments and 10 Self Contained Bungalows for older persons; Ancillary facilities and services; soft and hard landscaping; access and other associated works	C - Hotels, hostels and dwelling houses	C2	116	1.8	Submitted	Awaiting decision

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Map No.	Scheme	Local Authority	Application Ref	Applicant	Brief description	Planning Use Class		Homes	Distance (km)	Planning Status	
						Use Class(es)	Use Sub Class(es)			Approved/ Submitted	Details
21	Station Way, Friary Way, Haslett Avenue West And The Martlets, Northgate,Crawley	Crawley BC	CR/2024/ 0554/FUL	Crawley Borough Council	Implementation of Phase 1 Crawley Station Gateway development comprising comprehensive highways, pedestrian, cycling and public realm enhancements. Provision of bus station alterations to enhance bus movements, including redesigned bus stops and new shelters to Friary Way, and the relocation of bus layover stands to Haslett Avenue West and Station Way. Modifications to traffic signals, junctions and highway layout on Station Way and improvements to pedestrian environment at The Martlets. Public safety and accessibility improvements to the pedestrian and cycle environment and public realm enhancement through hard and soft landscaping.	Sui Genesis	N/A	0	2.3	Approved	Approved 12 February 2025
22	Staff Car Park, Tunnel Road, Gatwick Airport	Crawley BC	CR/2022/ 0707/CON	Gatwick Airport Limited	Consultation from Gatwick Airport Limited (Permitted Development) re: construction of a multi-storey car park (3,200 vehicle spaces)	Sui Genesis	N/A	0	4.1	No Objection	No Objection 3 March 2023

Table 16.1: Committed Developments Description

Map No.	Scheme	Local Authority	Application Ref	Applicant	Brief description	Planning Use Class		Homes	Distance (km)	Planning Status	
						Use Class(es)	Use Sub Class(es)			Approved/ Submitted	Details
23	Moka, Station Way, Northgate, Crawley	Crawley BC	CR/2019/ 0542/FUL	Rainier Developments Limited	Demolition Of Existing Nightclub And Redevelopment Of Site Providing 152 Apartments, Ground Floor Commercial/Retail Space (Class A1, A3, A4, B1 And/Or D2 Uses) Split Between 2 To 4 Units, New Publicly Accessible Public Realm (Including Pocket Park), New Publicly Accessible Electric Vehicle Charging Hub, Car Club And Associated Works	C - Hotels, hostels and dwelling houses	C3, E	152	2.6	Approved	Permitted May 2020. Commenced 2023
24	Linac House & Adjoining Land, Fleming Way, Northgate, Crawley	Crawley BC	CR/2022 /0609/FUL	Phoenix Life Limited	Redevelopment Of The Site For Three Commercial Buildings – Unit 1 (Class B2 Use), Units 2 And 3 (Class B8 Use) And Associated Servicing, Parking And Landscaping.	B - Further business and industrial activities	B2/B8	0	2	Permitted	11/03/2025

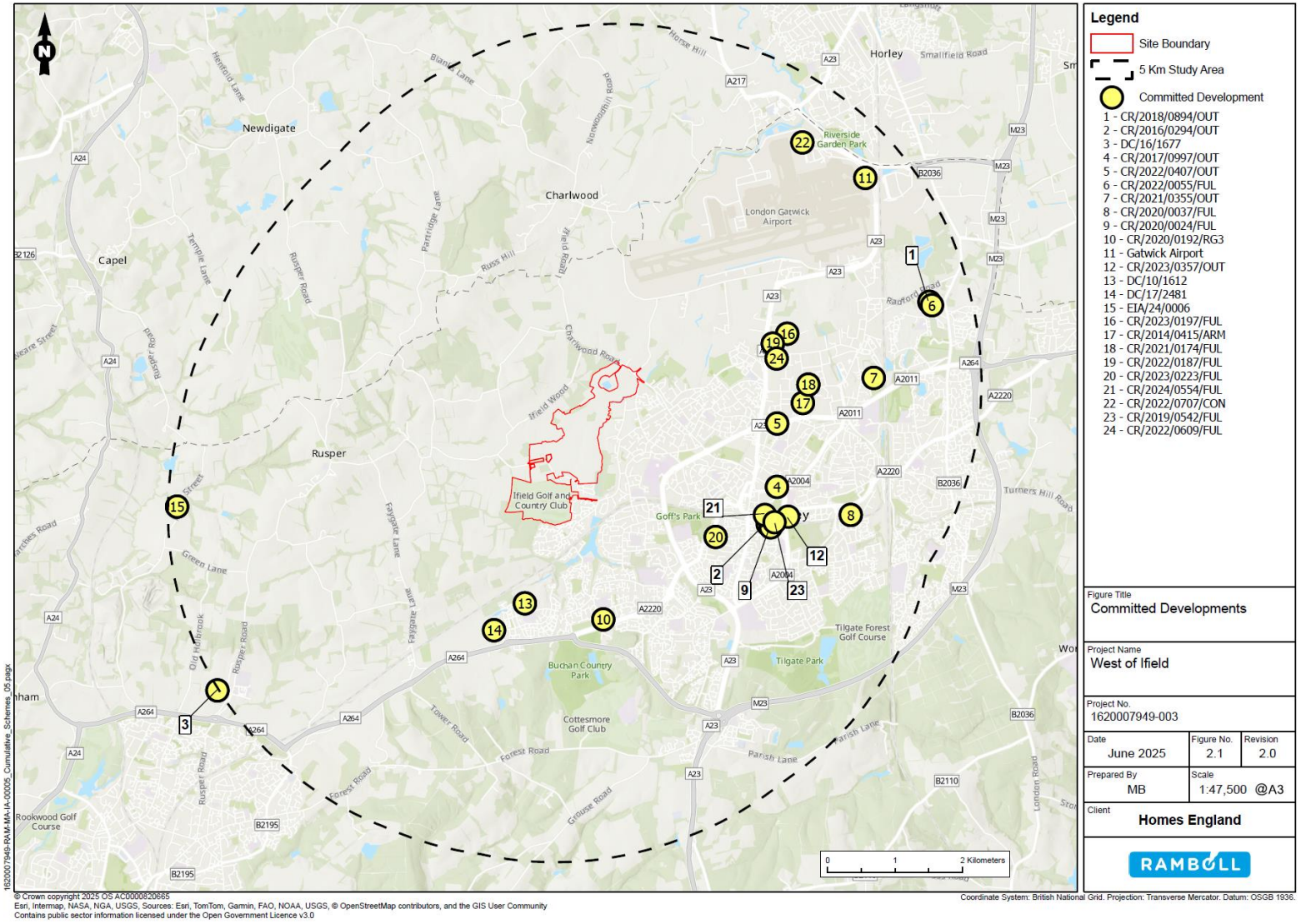

Figure 16.1: Committed Developments Location

16.2.6 Inter-project effects have been addressed in each technical chapter of the ES Volume 1 (Chapters 6-15) as appropriate. To avoid significant repetition, a summary of the cumulative assessment presented in each of the technical chapters is as follows:

- Soil and Agriculture: During the construction of five of the Committed Developments (DC/16/1677, EIA/24/0006, CR/2022/0055/FUL, CR/2021/0355/OUT, CR/2020/0192/RG3), when in combination with the Proposed Development, there is likely to be significant cumulative effects on agricultural land as these five Committed Developments will result in the loss of agricultural land. The agricultural land lost, within 5km of the Site, is anticipated to involve Subgrade 3b *medium sensitivity) and/or Grade 4 (low sensitivity) land from Agricultural Land Classification (ALC) information online.
- Air Quality: Significant cumulative effects are unlikely to occur as each of the Committed Developments is anticipated to employ similar dust mitigation techniques, as proposed for the Proposed Development, such that the individual demolition and construction stage effects are not significant, alone or in combination.

  In addition, operational traffic data from Committed Developments has been included in the future baseline traffic data of the transport model. The results, which have been used in the air quality assessment, includes the in-combination effects from the Committed Developments. No significant effects on air quality are anticipated as a result of the operation of the Proposed Development.
- Biodiversity: Cumulative effects are not considered likely to be significant for biodiversity beyond short term adverse effects on foraging bats whilst new habitats are establishing.
- Climate Change: Cumulative Climate Change Resilience (CCR) effects resulting from the demolition and construction and completed development stages would be limited in their spatial extent to the Site boundary and the Proposed Development in isolation. Therefore, cumulative CCR effects with other schemes are not applicable.

  In-Combination Climate Change Impact (ICCI) effects would be limited in their spatial extent to the relevant technical assessments in the ES for the Proposed Development. Therefore, intra-project cumulative effects have already been considered within the Climate Change ES chapter. For ICCI effects, given the specific nature of the assessment, it is not appropriate to consider in-combination effects with other cumulative schemes (inter cumulative assessment).

  .Effects of greenhouse gas (GHG) emissions from the Committed Development have not been individually assessed as GHG emissions have been contextualised within the UK, HDC and building sector carbon budgets. GHG emissions are inherently cumulative and global in nature. The assessment therefore considers the Proposed Development's emissions in the context of national and regional carbon budgets, which already reflect the aggregated emissions from all sectors and activities. This approach ensures that the assessment will focus on whether the Proposed Development would materially affect the UK's ability to meet its legally binding carbon reduction targets.
- Cultural Heritage: A proposal by Gatwick Airport Ltd to amend Gatwick Airport may give rise to cumulative effects on the historic environment and on the setting of designated heritage assets located within the urbanised areas of Horley and Crawley, including from increases in airborne noise and from road traffic, although not to a degree that any effect would be significant.
- Landscape and Visual Impact: Cumulative effects are not considered likely for visual effects due to lack of intervisibility with any of the Committed Developments.

There are potential cumulative effects on landscape character, and there is a potential effect from a further reduction in tranquillity from the Proposed Development and the extension of Gatwick airport which would result in additional aircraft passing over the area. However, this is not considered to contribute to the likely significant effects on landscape character identified as arising from the Proposed Development in isolation. There are also a number of potential cumulative effects on National Character Area (NCA) 121 Low Weald from the Proposed Development and the large scale residential schemes, which are included within the Committed Developments, proposed to the north of Horsham. However, with high-quality green infrastructure, these effects would not be significant for the NCA as a whole.

- Noise: Cumulative effects due to demolition and construction noise and vibration are not expected due to the distances between the receptor locations and the Committed Developments.

  It is unlikely that there will be cumulative completed development road traffic noise effects as traffic flows associated with the Committed Developments with submitted planning applications have been included in the traffic data used in the completed stage Proposed Development assessment. All residual effects of this assessment were considered to be not significant.

- Socio-economics and Health: It is anticipated that a number of construction jobs would be created from Committed Developments within 5km of the Site. This might give rise to a temporary change of high magnitude in construction employment and lead to a short-term, major, significant beneficial cumulative effect. However, such an impact on employment may also bring with it new demand for services, such as schools and GPs. Although these effects would only be temporary, it is considered unlikely that the peak construction periods for the Committed Developments would coincide and hence the cumulative effects are not considered to be significant.

  The population growth associated with the completed development stage of the Committed Developments within 5 km of the Site, may increase demand for education, healthcare, retail and community facilities. While this could benefit local businesses on the Site, it may also place additional pressure on existing services. However, all such developments will be required to contribute financially through s106 agreements and/or Community Infrastructure Levy, helping to mitigate potential impacts on local infrastructure.

- Surface Water and Flood Risk: The overall scale of surface water resources and flood risk cumulative effects would be no greater than that of the Proposed Development in isolation. Therefore, it is unlikely that there would be any significant adverse cumulative effects on flood risk or surface water quality.

- Transport: Traffic modelling has tested the Proposed Development, Committed Developments impacts and the cumulative Gatwick Airport DCO scheme within the core scenario, and therefore no further impacts are expected other than those identified in the ES Volume 1 Chapter 15: Transport.

16.3 Assessment of Intra-Project Effects

Methodology

16.3.1 As mentioned previously, there is no established EIA methodology for assessing or quantifying the combined potential impact of individual effects on sensitive receptors. Accordingly, Ramboll has utilised an approach which uses the defined residual effects of the ES and determines the potential for interactions between effects as a result of the Proposed Development, and consequently the

potential for significant intra-project cumulative effects to arise. This approach has been informed by professional judgement.

16.3.2 The approach comprises the following steps:

- A review of the likely residual effects, with a focus on those considered likely to be significant environmental effects, as presented within the ES (negligible and neutral effects have not been included in the assessment);
- Reviewing the likely receptors or receptor groups which were identified with the relevant residual effects;
- Determination of the individual effects which may affect a single receptor or receptor group ;
- Identification of the potential for individual effects to interact ; and
- Assessment of the scale of the combined intra-project cumulative effects .

16.3.3 Representative groups and/or individual receptors potentially most sensitive to impact interactions have been identified. The criteria for identifying such receptors included looking at the types of existing and future land uses and occupiers; proximity to the demolition and construction works; likely duration of exposure to impacts; and nature of impacts. Such an approach is considered a reasonable and appropriate approach to identifying likely significant cumulative effects as it has looked at receptors from a qualitative view, based on professional judgement.

16.3.4 It is standard practice for some technical chapters, such as Ecology, Socio-Economics and Cultural Heritage to consider cross-discipline effects as an inherent component of the technical chapter. For example:

- The Ecology Chapter considers impact interactions from air quality and traffic on ecological receptors;
- The Socio-economic Chapter accounts for in-combination effects of a range of other technical disciplines on all key socio-economic receptors including recreation and amenity receptors, human health and local businesses; and

16.3.5 The Cultural Heritage Chapter accounts for the indirect impact to the setting of designated and non-designated heritage assets from visual changes and noise. In both cases the context of a heritage asset may be altered in such a way as to change the value of the asset. Therefore, when assessing a potential likely significant effect, visual changes and noise have already been included with the technical cultural heritage assessment as sources of impact to be considered.

16.3.6 Therefore, these interactions have not been repeated within this ES Chapter.

16.3.7 In addition to the above, for Air Quality, potential interactions with receptors on footpaths (including public rights of way (PRoWs)) have not been assessed within the intra-cumulative assessment. This is because it is considered that receptors (i.e. local residents) using footpaths would not be exposed to PM_{10} concentrations for the relevant averaging period and therefore the 24 hour mean PM_{10} limit wouldn't be exceeded in any case. Therefore, there is unlikely to be exposure for this length of time to residents using footpaths. For the completed development stage, the same applies; the limit is not likely to be exceeded and therefore exposure for the 1 hour period would not occur due to the intermittent nature of people walking along footpaths. Subsequently, these interactions are not included within this ES Chapter.

16.3.8 As described in ES Volume 1 Chapter 13: Socio-Economics and Health, the Proposed Development would result in the loss of up to four residential units. Potential intra-cumulative interactions with these on-Site receptors have not been assessed within the intra-cumulative assessment. This is

because it is understood that these dwellings would either be vacant or demolished prior to the construction stage. Therefore, there would be no receptors at these locations at the time of the proposed works. Additionally, potential measures would be taken to reduce the significance of adverse effects on local residents and communities prior to the commencement of the demolition and construction stage, which would include giving current tenants in properties to be demolished as much notice as possible so that they can make necessary plans.

16.3.9 However, there is the exception of the residential property at the bungalow at Lower Barn, as the occupants may potentially be able to remain in situ until one of the later phases of the demolition and construction stage. If this is the case, there may be the potential for intra-cumulative effects in respect of demolition and construction impacts from dust, noise and transport. It is expected that these effects could be reduced at the source through the application of traffic and dust control measures in the Detailed Construction Environmental Management Plan (CEMP) and Construction Traffic Management Plan (CTMP) which are to be secured via a planning condition and which would include the following measures; maintaining good housekeeping on-Site; clearly outlining traffic routes for construction vehicles; scheduling just-in-time deliveries; and providing a public liaison officer whereby the public can communicate any complaints or unforeseen effects to the principal contractor. It is therefore expected that these combined temporary effects would be minimised, and these have not been assessed further in the intra-cumulative assessment.

16.3.10 Similarly, there may be the potential for intra-cumulative effects in respect of demolition and construction impacts from dust, noise and transport on the tenanted farmer who currently works on the agricultural land on-Site. It is predicted that the tenant agreement will have ended prior to the agricultural land being required for the Proposed Development. However, there is the potential that the tenant may be on-Site at the same time as the first stage/s of the demolition and construction stage. If this is the case, there may be the potential for intra-cumulative effects in respect of demolition and construction impacts from dust, noise and transport. As mentioned above, it is expected that these effects could be reduced at the source through the application of traffic and dust control measures in the Detailed CEMP and CTMP which are to be secured via a planning condition and which would include appropriate mitigation measures. It is therefore expected that these combined temporary effects would be minimised, and therefore these have not been assessed further in the intra-cumulative assessment.

16.3.11 Impact interactions by their nature tend to be indirect, difficult to quantify and can be subjective. Impact interactions may be additive or synergistic, and it is noted that intra-project cumulative effects are more likely to arise when the receptor or receptor group is more sensitive to change, such as human receptors. As a result of these complexities, impacts are assessed qualitatively, drawing on professional judgement and Ramboll's experience with developments of a similar nature and scale.

Assessment Results

16.3.12 Based on the methodology detailed above, Figures 16.2 to 16.3 present the results of the potential for interactions of qualifying individual reported effects on receptors for the demolition and construction stage and completed development stage, respectively.

16.3.13 Each technical assessment has been undertaken on the basis of a reasonable worst-case scenario. Therefore, the intra-cumulative effects reported within this chapter could overstate the effects that are likely to occur at any given receptor group in reality.

Intra-Project Effects During Demolition and Construction

16.3.14 As shown in Figure 16.2, demolition and construction stage effect interactions are likely to arise at the following receptors and receptor groups.

Residents and the Wider Community to the North and North-East of the Golf Course

16.3.15 Intra-cumulative effects are likely to arise for residents and the wider community to the north and north-east of the golf course, in respect to:

- Potential landscape and visual effects with regards to a change in visual amenity, specifically to Viewpoints (VPs) 29A, 34 and 35;
- Potential noise effects with regards to the generation of demolition and construction activities and plant noise, specifically to the noise receptors of R8, R9, and R10; and
- Potential vibration effects with regard to the generation of demolition and construction plant vibration, specifically for noise receptor R10.

16.3.16 Given the close proximity of VPs 29A, 34 and 35 from the landscape and visual assessment, and the noise receptors of R8, R9 and R10 from the noise and vibration assessment, it is likely that intra-cumulative effects would occur at these receptors, respectively. Effects on these receptors would be adverse.

16.3.17 Residential receptors at these locations (primarily along Rusper Road, at Lower Barn and within the Maples development) would likely experience a temporary and Major adverse (significant) effect in respect to changes in visual amenity, as well as a temporary, Major adverse (significant) effect for noise due to the generation of demolition and construction activities and plant noise.

16.3.18 An additional Moderate adverse effect has also been reported in ES Volume 1 Chapter 12: Noise and Vibration for the noise receptor of R10 (which approximately aligns with landscape and visual receptor of VP35). This would be due to the generation of demolition and construction plant vibration. This would normally be considered to be a significant effect, however as described in ES Volume 1 Chapter 12, this has been based on a calculation of vibratory compaction at its nearest point to the receptor and is considered a worst-case scenario. Once the vibratory compactor has moved 20m along the respective section of the road, the predicted Peak Particle Velocity (PPV) level will drop below the Significant Observed Adverse Effect Level (SOAEL) and would not be considered to be significant.

16.3.19 It is expected that the noise effects could be reduced at the source through the application of traffic and noise measures in the Detailed CEMP and CTMP which are to be secured via a planning condition. It is further noted that the noise and vibration assessment of the demolition and construction stage is modelled on the basis of the highest reasonably likely noise/vibration emissions as experienced by the closest Noise Sensitive Receptors (NSR) and therefore the results represent noise peaks and are not indicative of a continuous noise level. Due to this, the reported effects are greater than those that would be experienced in reality throughout the majority of the demolition and construction stage.

16.3.20 In addition, the significant visual effects would be contained to the immediate Site and receptors within close proximity of the Site due to the high level of containment provided by the landform and existing mature vegetation. Therefore, the existing assessment represents a worst case scenario and the reported effects would be greater than those that would be experienced in reality throughout the majority of the demolition and construction stage.

16.3.21 Accordingly, on the basis of the consideration of the above, the residual intra-project cumulative effects are likely to be Major adverse (significant) in regards to a change in visual amenity and the

generation of construction noise and vibration impacts at receptor locations primarily along Rusper Road, at Lower Barn and within the Maples development.

Residents to the South of Ifield Court Hotel

16.3.22 Intra-cumulative effects are likely to arise for residents to the south of Ifield Court Hotel, near the Druids, in respect to:

- Potential landscape and visual effects with regards to change to visual amenity, specifically to VP 9;
- Potential noise effects with regards to the generation of demolition and construction activities and plant noise, specifically to noise receptor R3; and
- Potential vibration effects with regard to the generation of demolition and construction plant vibration, specifically for noise receptor R3.

16.3.23 Viewpoint 9, and the subsequent residents within the noted area of 'south of Ifield Court Hotel', is located on the edge of the Site on a PRoW to the south-west of Ifield Court Scheduled Monument. The proposed receptors here represent people using the footpath and people living in properties of nearby properties at the Druids.

16.3.24 Given the close proximity of VP 9 and noise receptor R3, it is likely that there would be an intra-cumulative effect at these receptors, as a result of a change in visual amenity and an increase in demolition and construction noise and vibration. Effects on these receptors would be adverse.

16.3.25 Residential receptors at these locations would likely experience a temporary and Major adverse (significant) effect in respect to changes in visual amenity, as well as a temporary, Minor adverse (not significant) effect for noise due to the generation of demolition and construction activities and plant noise. There would also be a temporary, Minor adverse (not significant) effect for vibration due the generation of demolition and construction plant vibration as a result of the Proposed Development.

16.3.26 As noted above, it is expected that the noise effects could be reduced at the source through the application of traffic and noise measures in the Detailed CEMP and CTMP which are to be secured via a planning condition. It is further noted that the noise and vibration assessment of the demolition and construction stage is modelled on the basis of the highest reasonably likely noise/vibration emissions as experienced by the closest Noise Sensitive Receptors (NSR) and therefore the results represent noise peaks and are not indicative of a continuous noise level. Due to this, the reported effects could overstate those that would be experienced in reality throughout the majority of the demolition and construction stage.

16.3.27 In addition, the significant visual effects would be contained to the immediate Site and receptors within close proximity of the Site due to the high level of containment provided by the landform and existing mature vegetation. Therefore, the existing assessment represents a worst case scenario and the reported effects would be greater than those that would be experienced in reality throughout the majority of the demolition and construction stage.

16.3.28 Accordingly, on the basis of the consideration of the above, the residual intra-project cumulative effects are likely to be Minor adverse (not significant) to Moderate adverse (Significant) in respect of changes to visual amenity, and the generation of construction noise and vibration impacts for residents to the south of Ifield Court Hotel, and specifically at receptor locations of VP 9 and R3.

Recreational Users of Public Rights of Ways

16.3.29 Intra-cumulative effects are likely to arise for recreational users of Public Rights of Way (PRoW) on-Site and off-Site, in respect to:

- Potential landscape and visual effects with regards to change to visual amenity; and
- Potential socio-economics and health effects in regards to disruption to PRoWs.

16.3.30 Within ES Volume 1 Chapter 13: Socio-Economic and Health, users of PRoWs have been assessed as having a temporary, Negligible-Minor (not significant) effect as a result of disruptions to PRoWs during the demolition and construction works of the Proposed Development.

16.3.31 In regards of a change in visual amenity, there would be a Major adverse (significant) effects for recreational users of the PRoWs that run through the centre of the Site, and a Moderate to Major adverse (significant) effect for recreational users of the PRoWs that run along the northern edge of the golf course. Both of these footpaths are located within or close to the Site and would therefore be in close proximity to the construction activities. There would also be Moderate to Major adverse (significant) effect for recreational users of the PRoW that runs along the edge or within the northern parts of the Site. These footpaths would be in close proximity to the construction of the Crawley Western Multi-Modal Corridor (CWMCC).

16.3.32 It is expected that these effects could be reduced at the source through the application of traffic and dust control measures in the Detailed CEMP and CTMP which are to be secured via a planning condition and would include the following measures; maintaining good housekeeping; clearly outlining traffic routes for construction vehicles; communicating PRoW closures and diversions to local residents and users; scheduling just-in-time deliveries; and providing a public liaison officer whereby the public can communicate any complaints or unforeseen effects to the principal contractor. It is therefore expected that these combined temporary effects would be minimised.

16.3.33 In addition, the implementation of the transport mitigation package as set out in ES Volume 1 Chapter 15: Transport, secured by appropriate planning condition(s) attached to the outline permission or as detailed within future reserved matters applications, or replicated in an alternative application, would include the provision of suitable PRoW diversions during the demolition and construction stage.

16.3.34 Accordingly, based on the above considerations, the residual intra-project cumulative effects during the demolition and construction phase are assessed as ranging from Minor adverse (not significant) to Moderate adverse (Significant) in respect of changes to visual amenity and socio-economic and health effects for recreational users of PRoWs.

	Likely Residual Effects	Relevent Receptors																																				
		Soil Resources	Subgrade 3b agricultural land	Farm Holdings	Habitats On-Site	Invertebrates	Bats	Global Climate	HA001 Medieval moated site at Ifield Court	HA038 Ifield Village conservation area	HA070 Ifield Medieval Park	HA074 Archaeological Character Area 4: Ifield Court Farm (east)	Residents and the wider community using roads and footpaths close to the eastern boundary of the golf course	Residents and the wider community using roads and footpaths close to the north-east of the Site	Residents and the wider community using and living along Rusper Road, at Lower Barn and within the Maples development to the north and north-east of the golf course	Residents to the south of Ifield Court Hotel	Recreational Users of PRoWs on-Site and off-Site	Residents and the wider community using roads and footpaths along the River Mole close to the eastern boundary of the Site	Pedestrians and drivers using Bonnets Lane and Charlwood Road	National Character Area 121 Low Weald	Landscape Character Areas (LWB: The Northern Vales, and LCA K1: Narrow Clay Vale Farmlands)	Local Landscape Character Areas (LLCA 4: River Mole, LLCA 5: Land West of Ifield Brook, LLCA 6: Rusper Road, LLCA 7: Ifield Golf Club)	Ifield Rural Fringe Character Area	Ifield Farmed Ridge Character Area	Individual landscape elements (e.g., fields, hedgerows, trees, boundary vegetation, watercourses).	Future On-Site Residential Receptors	Existing Off-Site Receptors	Labour Market	Accomodation Stock	Educational Facilities	Primary Healthcare Facilities	Users of Recreational Areas (i.e Ifield Golf Club)	Users of Surrounding Open Spaces and Playing Fields	Sports Facilities	Local Communities	Local Businesses	Flood risk status of on-Site and off-Site land uses
Soil and Agriculture	Reuse of soils on Site																																					
	Change of land use/soil function from agriculture to a platform for development (sealing)																																					
	Cessation of farm tenancy																																					
Biodiversity	Loss of and degradation of habitat, enhancement of existing habitats, creation of new habitat - Change in habitat extent and/or value?																																					
	Mortality or loss of species/species' habitat, due to change, fragmentation and/or degradation of habitat																																					
Climate Change	GHG Emissions																																					
Cultural Heritage	Change to a key characteristic of historical interest																																					
	Loss of resource																																					
Landscape and Visual Impact	Change to visual amenity																																					
	Change in landscape or landscape character																																					
Noise and Vibration	Generation of demolition and construction activites and plant noise																																					
	Generation of demolition and construction plant vibration														*																								
Socio Economics and Health	Change in employment and local spending																																					
	Change in demand for short-term accommodation from non-home based workforce																																					
	Change in demand for primary and secondary educational facilities																																					
	Change in demand for healthcare facilities from the workforce																																					
	Loss of Recreational Areas (i.e. Ifield Golf Club)																																					
	Increased demand on surrounding open spaces and playing fields																																					
	Disruption to PRoWs																																					
	Change in demand for sports facilities																																					
	Loss of on-Site structures and out-buildings (including up to four residential units)																																					
	Loss of golf course and farmland businesses																																					
Surface Water and Flood Risk	Change in Flood Risk Status																																					
	Temporary alteration to in-channel or surface water overland flow regimes																																					
	Increase in the impermeable surface area																																					
Potential for Effect Interaction and so Combined Cumulative Effect?		**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Major Beneficial
Moderate Beneficial
Minor Beneficial
Negligible to Minor Beneficial
Negligible to Minor Adverse
Minor Adverse
Moderate Adverse
Moderate to Major Adverse
Major Adverse

* Not Significant. See ES Volume 1 Chapter 12 Noise and Vibration for further detail

Figure 16.2 – Demolition and Construction Stage Intra-Project Cumulative Effects

Intra-Project Effects During Completed Development

16.3.35 As shown in Figure 16.3, completed development stage effect interactions are likely to arise at the following receptors and receptor groups.

Residents and the wider community using and living along Rusper Road, at Lower Barn, and within the Maples Development

16.3.36 Intra-cumulative effects are likely to arise for residents and the wider community using and living along Rusper Road, at Lower Barn and within the Maples Development to the north and north-east of the golf course, in respect of the following:

- Potential landscape and visual effects with regards to change to visual amenity, specifically at VPs 29A, 34 and 35; and
- Potential noise effects with regards to operational road traffic noise, specifically at noise receptors R8, R9 and R10.

16.3.37 Effects on residents and the wider community at VPs 29A, 34 and 35, and concurrently noise receptors R8, R9 and R10 respectively, would be both beneficial and adverse.

16.3.38 Changes in road traffic noise levels are expected to result in a Major beneficial (Significant) effect at receptors R8, R9 & R10 in the long term. Noise barriers and bunds have been embedded into the design of the Proposed Development, specifically regarding the CWMMC, to reduce potential road traffic noise effects on existing noise sensitive receptors. Further to this, beneficial impacts are predicted due to the anticipated changes in traffic volumes, compositions, or speeds on parts of the existing road network, due to the redistribution of traffic through the CWMMC.

16.3.39 More specifically, the residential noise receptor R8 is predicted to experience a permanent low beneficial impact for noise due to the redistributed traffic impacts of the Proposed Development. Receptors R9 and R10 are predicted to experience a permanent high beneficial impact due to the redistributed traffic impacts of the Proposed Development.

16.3.40 For landscape and visual, a Moderate adverse (significant) effect is predicted for VPs 29A, 34 and 35 due to the receptors being in close proximity to the Site, and having open views of the Proposed Development in a number of directions.

16.3.41 No additional mitigation has been identified in respect of the potential intra-cumulative effects.

16.3.42 Accordingly, on the basis of the consideration of the above, the residual intra-project cumulative effects are likely to be Minor beneficial (not significant) in respect of change in visual amenity and road traffic noise levels during the completed development stage at these receptor locations.

Recreational Users of Public Rights of Ways

16.3.43 Intra-cumulative effects are likely to arise for recreational users of PRoWs, in respect of the following:

- Potential landscape and visual effects with regards to change to visual amenity;
- Potential socio-economics and health effects with regards to the provision of recreational areas and publicly opens spaces;
- Potential transport to beneficial effects with regards to change in severance due to change in traffic flows;
- Potential transport effects with regards to change in pedestrian delay due to change in traffic flows;

- Potential transport effects with regards to change in pedestrian amenity due to change in traffic flows;
- Potential transport effects with regards to change in fear and intimidation due to change in traffic flows; and
- Potential transport effects with regards to change in pedestrian flows due to change in pedestrian links.

16.3.44 Effects on existing and future on-Site pedestrians, would be both beneficial and adverse.

16.3.45 As described in ES Volume 1 Chapter 13: Socio-Economics and Health, the provision of recreational areas and open spaces of the Proposed Development would meet the requirements of the new population, and would provide a Minor beneficial (not significant) effect for users of the recreational areas and open spaces (including PRoWs).

16.3.46 With regard to transport, adverse effects would result from changes in severance, delay, amenity, and fear and intimidation due to a change in traffic flows. A package of additional mitigation has been proposed and would be secured by means of financial contributions through S106 or appropriately worded planning conditions. These measures include promoting active transport, providing signalised junctions and signalised pedestrian crossing facilities, and the provision of funding for Local Cycling and Walking Infrastructure Plan (LCWIP) for route L, and parts of routes M and P. The LCWIP routes stated include the routes between Charlwood Road / CWMMC junction to Langley Walk (route M), along route P (from Ifield Avenue to A23 London Road), and route L between Rusper Road and the town centre, via Ifield Station. However, the majority of these mitigation measures would be for off-Site receptors.

16.3.47 At completion there would be significant adverse effects on the views experienced by receptors both within and close to the Site. In particular, people using the PRoWs within the Site would be significantly affected. Over time, and with the maturing of the new landscape proposals, the level of the adverse effect would be reduced but with a few exceptions that would remain significant and adverse, either as the Proposed Development would remain visible in close proximity or that open views would be screened by bunds or vegetation which would change the character of views. This includes many of the PRoWs on-Site, especially for recreational uses of PRoWs on the edge or within the Site (VPs 3, 4, 14, 29B, 30 and 31) which has been assessed as having a Major adverse (significant) effect, and recreational users of PRoW on the northern edge of the golf course or within the northern parts of the Site (VPs 18, 25, 26, 27, 5, 6, 9 and 36) which has been assessed as having a Moderate to Major adverse (significant) effect. The new tree planting within the northern part of the Site would benefit the view towards the new CWMMC, however this would still have a Minor adverse (not significant) effect at completion.

16.3.48 No additional mitigation has been identified in respect of the potential intra-cumulative effects.

16.3.49 Accordingly, on the basis of the considerations above, the residual intra-project cumulative effects are likely to be permanent, long-term Minor Adverse (not significant) in respect of existing and future on-Site pedestrians during the completed development stage.

<u>Receptors at Trivelles Gatwick Hotel, and the Hyde, Rusper Road</u>

16.3.50 Intra-cumulative effects are likely to arise for receptors (i.e. visitors and residents) at Trivelles Gatwick Hotel, and the Hyde, Rusper Road, in respect of the following:

- Potential noise effects with regards to operational road traffic noise, specifically to noise receptors R2;

- Potential transport effects with regards to change in traffic flows, specifically to Transport Link B5;
- Potential transport effects with regards to change in severance due to change in traffic flows, specifically to Transport Link B5;
- Potential transport effects with regards to change in pedestrian delay due to change in traffic flows, specifically to Transport Link B5; and
- Potential transport effects with regards to change in pedestrian amenity due to change in traffic flows, specifically to Transport Link B5.

16.3.51 Given the receptors' close proximity, it is likely that there would be intra-cumulative effects on noise receptor R2 and Transport Link B5 respectively. Effects on these receptors would be both beneficial and adverse.

16.3.52 Similar to the above, with regard to transport, Minor adverse (not significant) effects would result from changes in traffic flows, severance, pedestrian delay, pedestrian amenity. A package of additional mitigation has been proposed and would be secured by means of financial contributions through Section 106 Agreement or appropriately worded planning conditions.

16.3.53 With respect of noise, a Major adverse effect would result from changes in operational road traffic noise at this receptor (and Transport Link B5 respectively) as the receptor lies to the north of the CWMMC and therefore would have impacts from road traffic noise from the creation of the CWMMC. However, as explained in ES Volume 1, Chapter 12: Noise and Vibration, the predicted absolute noise level at these receptors with the Proposed Development is below the Lowest Observed Adverse Effect Level (LOAEL), and therefore the effect is not considered to be significant as it is unlikely that there would be any adverse effects on health or quality of life or changes to behaviour as a result of noise.

16.3.54 Accordingly, on the basis of the considerations above, the residual intra-project cumulative effects are likely to be permanent, long-term Minor Adverse (not significant) during the completed development stage at these receptor locations.

Tweed Lane Dwellings and Rectory Lane Dwellings

16.3.55 Intra-cumulative effects are likely to arise for Tweed Lane Dwellings and Rectory Lane Dwellings, in respect of the following:

- Potential noise effects with regards to operational road traffic noise, specifically to noise receptor R7;
- Potential transport effects with regards to change in traffic flows, specifically to Transport Link B2; and
- Potential transport effects with regards to change in severance due to change in traffic flows, specifically to Transport Link B2.

16.3.56 Given the receptors' close proximity, it is likely that there would be intra-cumulative effects on noise receptor R7 and Transport Link B2 respectively. Effects on these receptors would be both beneficial and adverse.

16.3.57 The residential noise receptor R7 is predicted to experience a permanent low adverse impact due to the Proposed Development. This is due to the road traffic noise from the CWMMC. As assessed in ES Volume 1 Chapter 12: Noise and Vibration, it is unlikely that there would be any adverse effects on health or quality of life or changes to behaviour as a result of noise at this receptor location.

16.3.58 With regards to transport, residents located along or in close proximity to the Transport Link B2, which is located to the east of the Site, would have a Minor beneficial (not significant) effect in regard to traffic flows and severability. This is due to the provision of the CWMMC which would re-route a large number of vehicles from Horsham, through the Site and up to the Ifield Avenue to the north, and then back down to Crawley.

16.3.59 Accordingly, on the basis of the considerations above, the residual intra-project cumulative effects are likely to be permanent, long-term Negligible Beneficial (not significant) during the completed development stage at these receptor locations.

Bonnets Lane / Ifield Green Dwellings, Crawley Gurdwara, and The Hyde, Rusper Roa

16.3.60 Intra-cumulative effects are likely to arise for receptors at Bonnets Lane / Ifield Green Dwellings, Crawley Gurdwara, and The Hyde, Rusper Road, in respect of the following:

- Potential noise effects with regards to operational road traffic noise, specifically to noise receptor R1;
- Potential transport effects with regards to change in traffic flows, specifically to Transport Link B3; and
- Potential transport effects with regards to change in severance due to change in traffic flows, specifically to Transport Link B3.

16.3.61 Given the receptors' close proximity, it is likely that there would be intra-cumulative effects on noise receptor R1 and Transport Link B3 respectively. Effects on these receptors would be beneficial.

16.3.62 The residential noise receptor R1 is predicted to experience a permanent low beneficial impact due to the redistributed traffic impacts of the Proposed Development.

16.3.63 With regards to transport, residents located along or in close proximity to the Transport Link B3, which is located to the north-east of the Site, would have a Minor beneficial (not significant) effect in regard to traffic flows and severability. This is due to the provision of the CWMMC which would re-route a large number of vehicles from Horsham, through the Site and up to the Ifield Avenue to the north, and then back down to Crawley.

16.3.64 Accordingly, on the basis of the considerations above, the residual intra-project cumulative effects are likely to be permanent, long-term Minor Beneficial (not significant) during the completed development stage at these receptor locations.

Likely Residual Effects		Relevant Receptors																																	
		Bats	Global Climate	HA001 Medieval moated site at Ifield Court	HA038 Ifield Village conservation area	Residents and the wider community using and living along Rusper Road, at Lower Barn and within the Maples development to the north and north-east of the golf course	Residents and the wider community using roads and footpaths close to the eastern boundary of the Golf Course	Residents and the wider community using roads and footpaths along Ifield Wood to the north-west of the Site	Residents to the south of Ifield Court Hotel close to the western boundary of the Site	Residents and the wider community using roads and footpaths along the River Mole close to the western edge of the Site	Recreational Users of PRoWs	Pedestrians and drivers using Bonnets Lane and Charlwood Road (VPs 7, 8)	National Character Area: 121 Low Weald	Landscape Character Areas (LWB: The Northern Vales, and LCA K1: Narrow Clay Vale Farmlands)	Local Landscape Character Areas (LLCA 4: River Mole, LLCA 5: Land West of Ifield Brook, LLCA 6: Rusper Road, LLCA 7: Ifield Golf Club)	Ifield Rural Fringe	Ifield Farmed Ridge	Trivelles Gawick Hotel and The Hyde, Rusper Road (R2 and R11)	Tweed Lane Dwellings and Rectory Lane Dwellings (R5 and R7)	Bonnets Lane / Ifield Green Dwellings, Crawley Gurdwara, and The Hyde, Rusper Road (R1, R4, R12)	The Hyde, Rusper Road (R11)	Future On-Site Residential Receptors	Future On-Site Gypsy & Traveller Receptors	Labour Market	Housing Stock	Educational Facilities	Users of Recreational Areas (i.e Ifield Golf Club) and Open Spaces	Sports Facilities	Local Communities	Local Businesses	Fluvial Flood Risk	Surface Water Runoff Characteristics	Existing and Future Drivers on the Surrounding Road Network	Existing Future Off-Site Pedestrians	Existing and Future Off-Site Cyclists
Biodiversity	Risk of mortality on species from vehicle collisions, increase in disturbance																																		
Climate Change	GHG Emissions																																		
Cultural Heritage	Change to a key characteristic of historical interest																																		
Landscape and Visual Impact	Change to visual amenity																																		
	Change in landscape character																																		
Noise and Vibration	Operational Road Traffic Noise																			*			*												
	External Amenity Noise																																		
Socio Economics and Health	Change in employment and local spending																																		
	Change in demand for housing																																		
	Change in demand for primary and secondary educational facilities																																		
	Change in demand for healthcare facilities																																		
	Provision of recreational areas and publicly open spaces areas																																		
	Change in demand for sports facilities																																		
	Change in journey times on Rusper Road following construction of Phase 1 (CWHMC)																																		
	Provision of more active lifestyles and pedestrian and cycling routes																																		
	Provision of new community, leisure and retail uses																																		
	Provision of new local businesses																																		
Surface Water and Flood Risk	Change in Flood Risk																																		
	Increase in impermeable surface area																																		
Transport	Changes in Traffic Flows																																		
	Change in Severance due to Change in Traffic Flows																																		
	Change in Driver Delay due to Change in Traffic Flows																																		
	Change in Pedestrian Delay due to Change in Traffic Flows																																		
	Change in Pedestrian Amenity due to Change in Traffic Flows																																		
	Change in Accidents and Safety due to Change in Traffic Flows																																		
	Change in Fear and Intimidation due to Change in Traffic Flows																																		
	Change in Pedestrian Flows due to Change in Pedestrian Links																																		
	Change in Cycle Flows due to Change in Cycle Links																																		
	Change in Public Transport Demand and Capacity																																		
Potential for Effect Interaction and so Combined Cumulative Effect?		**No**	**No**	**No**	**No**	**Yes**	**No**	**No**	**No**	**No**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Major Beneficial
Moderate Beneficial
Minor Beneficial
Negligible to Minor Beneficial
Negligible to Minor Adverse
Minor Adverse
Minor to Moderate Adverse
Moderate Adverse
Major Adverse
* Not Significant. See ES Volume 1 Chapter 12 Noise and Vibration for further detail

Figure 16.3 – Completed Development Stage Intra-Project Cumulative Effects

16.4 Conclusions

16.4.1 Potentially significant effects have been identified as part of the inter-project cumulative effects assessment of the Proposed Development for Soil and Agriculture due to the cumulative loss of agricultural land during the demolition and construction stage.

16.4.2 Within the ES Transport assessment (ES Volume 1 Chapter 15: Transport) traffic modelling has tested the Proposed Development, Committed Developments impacts and the cumulative Gatwick Airport DCO scheme within the core scenario. Therefore, there are no further impacts expected other than those identified in the ES Chapter.

16.4.3 No additional mitigation measures have been identified for inter-project cumulative impacts.

16.4.4 From the assessment of the potential for intra-project cumulative effects, it is noted that there are a number of potential adverse intra-project cumulative effects during the demolition and construction stage. However, it is generally accepted that as part of any construction works, receptors in close proximity to the Site (i.e. receptors directly adjacent to the Site or receptors with a direct line of sight of the Site and where significant construction noise would be experienced) would be affected to some degree by a combination of noise and traffic disturbance and, in this case, pedestrian delay due to the PRoW diversions. The mitigation measures described in ES Volume 1 Chapter 5: Demolition and Construction Description, and other technical ES Chapters would reduce this impact. Any concerns would be managed via a complaints procedure which would be put in place to effectively manage any local concerns during the construction phases.

16.4.5 Embedded mitigation has been included within the Proposed Development's design to minimise the potential for intra-project cumulative effects on local residents during the completed development stage, such as the construction of a noise bund, and positioning residential dwellings outside of the 60dB noise contour. There are also a number of beneficial intra-project cumulative effects associated with the completed development stage of the Proposed Development as a result of changes in traffic volumes, compositions, and a change in traffic speeds on parts of the existing road network due to the redistribution of traffic and the creation of the CWMMC.

16.4.6 However, it is noted that there are a number of potential adverse intra-project cumulative effects during the completed stage. These are mainly in relation to adverse impacts to views expected by receptors both within and close to the Site. In particular, people using PRoWs within the Site and residential receptors within the immediate vicinity of the Site would be significantly affected. Over time and with the maturing of the new landscape proposals, the level of adverse effect would reduce but with a few exceptions would remain significant and adverse, either as the Proposed Development would remain visible in close proximity or that open views would be screened by bunds or vegetation which would change the character of views.